

## **Project Proposal: Web Application for MS4 Electronic Reporting**

Submitted to:

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## 1.0 Introduction

The Pennsylvania Department of Environmental Protection (DEP) Bureau of Point and Non-Point Source Management (BPNPSM) seeks the development of a web-based periodic reporting application (“application”) to enable permittees of municipal separate storm sewer systems (MS4s) to electronically report to DEP activities completed under their NPDES permits. Depending on the permit, MS4s may be required during this permit term to report annually (“annual reports”) or every other year (“progress reports”) (collectively, “periodic reports”). For the next permit term, DEP is planning to require annual reporting for all permittees.

The Penn State Center for Environmental Informatics (CEI) is pleased to submit the following Statement of Work for development of the reporting application. CEI has considerable experience creating information technology solutions in the conservation and resource management domains and we welcome the opportunity to work with DEP on this project.

## 2.0 Project Understanding

The goal of this project is to enable NPDES permittees to electronically prepare and submit periodic reports (as specified by document number 3800-FM-BPNPSM0491) to DEP.

DEP provided detailed application business requirements (Appendix A) to CEI. CEI will conduct further requirements gathering, analysis and software design specification collaboratively with DEP. For the purposes of defining the overall scope of the project and estimating work, CEI has summarized our understanding of the main high-level needs as follows:

- Provide secure encrypted access to the application via a standard desktop web browser.
- Create a dedicated website to host the application at CEI.
- Enable linking of periodic reports to permitted facilities information stored in DEP’s enterprise data system, eFACTS, via common keys/identifiers.
- Automatically email users and DEP staff reminders (e.g., report overdue) and activity notifications (e.g., reports ready for review).
- Limit access and application functionality according to user roles (e.g., viewer, preparer, certifier, account manager, co-permittee).
- Enable users to manage their account contact information, password (including reset), and security challenge questions.
- Preserve incremental report work both within and among login sessions.
- Track and display report progress to users.
- Enable attachment of external files to reports.
- Save report contents in a queryable data store.
- Create PDF documents of completed reports and make available to users and DEP staff.
- Provide a facility access to all of its submitted reports (read-only) and associated file attachments.

- Allow users to submit an updated report that supersedes a previously submitted report; preserve all submitted versions (as separate complete submissions).

### 3.0 Technical Approach

As illustrated in Figure 1, CEI proposes to develop the MS4 reporting tool as rich internet applications (RIA) that run natively in a modern web browser. The web applications will exchange data with a relational database via custom web services. Helper services will handle PDF generation and automatic notification emails. The components are discussed in further detail, below.

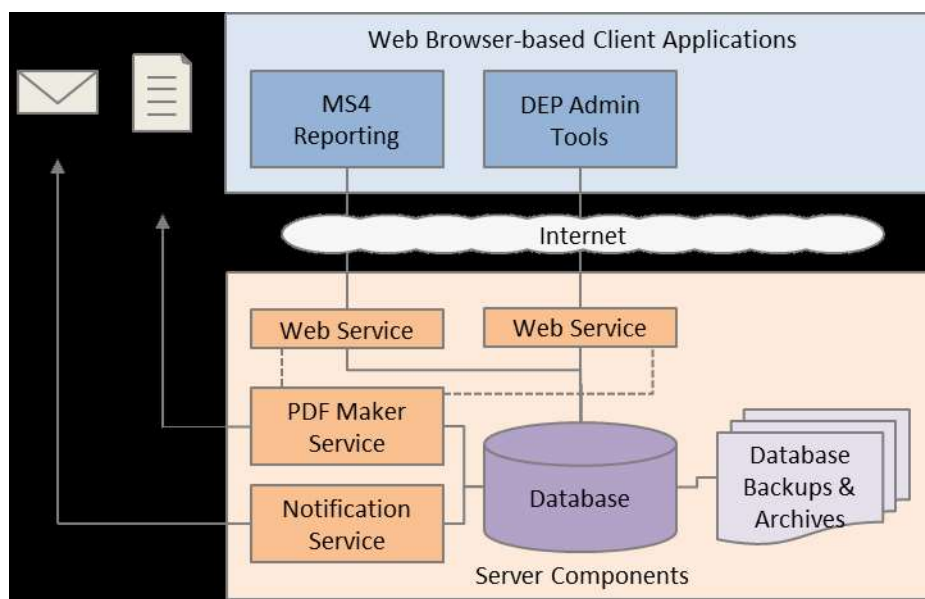


Figure 1. Overview of proposed system architecture.

#### 3.1 Web applications

The client-side web applications will provide the user interfaces for collecting and displaying report content. The application will be developed using JavaScript, open source JavaScript frameworks/libraries (e.g., Dojo), and HTML/CSS. The MS4 Reporting application will guide users through multiple forms and sub-forms to enter the required report content. Form controls will standardize and validate input values where appropriate as well as ensure required fields are completed. The DEP Admin Tools application will provide DEP staff with interfaces for managing users and reviewing submitted reports.

#### 3.2 Web services

Custom web services, developed in the Microsoft VB.Net framework, will transfer data between the web application and the relational database. The services read and write data into the database and enforce business rules and logic (e.g., only allow an account manager to submit a report, disallow the creation of reports for a new period until past due reports are submitted, etc.).

### 3.3 Support services

The PDF Maker Service will extract report content from the database, render it in printable page layout as defined by the existing DEP MS4 Report template (3800-FM-BPNPSM0491), save it to the Adobe PDF file format, and serve it to the user for viewing and/or saving. The Notification Service will run queries on the database at specified intervals and send automatic emails regarding system and reporting activities to users and administrators.

### 3.4 Database

A Microsoft SQL Server relational database will store all persistent reporting and system information such as report content, workflow/status metadata, user accounts, and notification metadata. CEI will back up the database nightly and store backups in two different buildings. CEI archives nightly backups for 4 weeks, weekly backups for 12 weeks, and monthly backups for a minimum of 52 weeks.

## 4.0 Tasks

In order to complete this work, CEI will perform the following tasks:

1. Work collaboratively with DEP stakeholders to define
  - a. use cases that illustrate desired system features, content, and behavior
  - b. functional software requirements based on the use cases
  - c. software design specifications
2. Develop a project relational database
  - a. Design conceptual, logical, and physical data models
  - b. Implement the database in Microsoft SQL Server
  - c. Develop and implement database maintenance plan (e.g., backup, archival, etc.)
  - d. Create documentation that describes the structure and content of the database
3. Write documented program code for the
  - a. web applications
    - i. MS4 Reporting

Section/Form	Sub-section/Sub-form (approximate # elements)
General Information	(15)
Water Quality Information	(8)
General MCM Information	(13)
MCM 1: Public Education and Outreach	BMP 1 (6), BMP 2 (3), BMP 3 (7), BMP 4 (1)
MCM 2: Public Involvement	BMP 1 (4), BMP 2 (3), BMP 3 (5)
MCM 3: Illicit Discharge	BMP 1 (3), BMP 2 (5), BMP 3 (5), BMP 4 (6), BMP 5 (4), BMP 6 (3)
MCM 4: Construction Runoff	BMP 1 (3), BMP 2 (2), BMP 3 (2), BMP 4 (1)
MCM 5: Post-Construction Runoff	BMP 1 (3), BMP 2 (3), BMP 3 (1), BMP 4 (3), BMP 5 (1), BMP 6 (8)
MCM 6: Pollution Prevention	BMP 1 (4), BMP 2 (3), BMP 3 (4)

General BMP information	(7)
BMP Inventory	(7)
Other Required Elements	(3)
Certification	(4)

- ii. DEP Admin Tool
  1. Create/edit user
  2. View submitted reports
- b. web services
- c. support services
  - i. PDF maker
  - ii. Email notification
4. Plan, execute, and coordinate software testing
  - a. Create a software testing plan
  - b. Perform internal testing
  - c. Beta test application with selected DEP stakeholders
5. Incorporate feedback identified in beta testing (e.g. bugs, change requests, etc.) and refine application
6. Conduct final review with DEP
7. Host completed website and application on CEI server

## 5.0 Tasks Not Part of this SOW

The following tasks are not included in this statement of work:

- User interface tools for DEP staff to
  - Modify report forms and form elements
  - Batch upload facility information files extracted from eFACTS
  - Manually update facility information
- User interface tools that enable the facility Account Manager role to create and edit users (in the viewer and preparer roles).
- Ad-hoc database query tools
- Electronic payment capabilities
- EPA eReporting integrations

## 6.0 Data Required

DEP will provide the data listed below in standardized structures and formats.

- MS4 facilities
- Client/Permittees
- Report due dates and reporting periods
- MS4 content requirements, instructions, and data validation rules
- Keys/identifiers for linking to eFACTS entities

## 7.0 Deliverables

The following deliverables will be provided as part of this project.

1. Dedicated website on CEI servers to host the application.
2. Fully functional web applications that enable
  - a. NPDES permittees to electronically prepare and submit periodic reports to DEP
  - b. DEP to create users and view submitted reports
3. Documented relational database of MS4 report data.

## 8.0 Project Schedule, Staffing and Budget

Brian Bills, CEI Associate Director, will have overall responsibility for the development and execution of this project. He will ensure that the objectives of this proposal are executed at CEI and that the deliverables designated above will be provided to DEP in accordance with the overall agreement. Regular web/teleconferences and e-mail communication with DEP staff will be used to coordinate work and report progress.

### 8.1 Schedule

The performance period is October 15, 2014 to June 30, 2015. Project milestones are indicated below.

Task	Month								
	1	2	3	4	5	6	7	8	9
Project kick-off meeting	x								
Software requirements and specification	x	x							
Relational database development			x	x	x				
Program MS4 applications and services			x	x	x	x	x	x	
Program helper services					x	x	x	x	
Conduct beta testing, incorporate feedback, and refine application								x	x
Host completed website and web application on CEI servers									x

## **8.2 Staffing**

The personnel requirements needed to perform the proposed work are:

Personnel	Role	Responsibilities
Brian Bills	PI	Plan and manage project. Direct requirements, design, specification, and implementation. Model, design, and implement database.
Doug Miller	Co-PI	Assist project management and administration.
Mike Anderson	Software Developer	Design and develop web applications, web services, and support services.
Mike Stryker	Tester	Design and execute testing plan (internal, DEP, and beta).

## **8.3 Budget**

Please see attached budget.

## **Appendix A: Business Requirements for Web-Based MS4 Periodic Reporting Application, July 2014**

### **Statement of Need**

The Pennsylvania Department of Environmental Protection (DEP) Bureau of Point and Non-Point Source Management (BNPNSM) requires the development of a web-based periodic reporting application (“application”) to allow permittees of municipal separate storm sewer systems (MS4s) to report activities completed under their NPDES permit to DEP electronically. Depending on the permit, MS4s may be required during this permit term to report annually (“annual reports”) or every other year (“progress reports”) (collectively, “periodic reports”). For the next permit term, DEP is planning to require annual reporting for all permittees.

DEP has developed a periodic reporting template, document number [3800-FM-BPNPSM0491](#), which permittees currently complete and mail in to DEP on paper. This template would be converted to a web-based application that permittees could use to submit reports electronically. In addition, EPA’s proposed NPDES Electronic Reporting Rule (“eReporting Rule”) would require the submission of program reports electronically; the rule is scheduled to be finalized in 2015.

The supporting database would need to use primary keys that match up to DEP’s Enterprise Data System, eFACTS, to allow for possible future data integration. Following completion of the application, other “modules” could be pursued (e.g., CAFO Annual Reports).

### **Application Requirements**

This section will review DEP’s existing periodic reporting template and discuss the necessary fields and validation needed for the application. This section will also discuss requirements for registration, user profiles and other functional requirements.

#### **Registration and Security**

There should be 4 security roles – Viewer, Preparer, Certifier and Account Manager. Viewers are only capable of reviewing pending and submitted reports. Preparers can view reports and complete the forms, but not submit reports. Certifiers can view reports, complete forms, and submit reports. Account Managers can do everything a Certifier can plus create new accounts under and associate new users to MS4 Facilities.

A paper registration form will be developed and posted to DEP’s website. MS4s will be requested to have all users associated with an MS4 Facility that will have Certifier and Account Manager roles complete the registration form and submit it to DEP. DEP will then create the accounts for those new users. Upon creating the accounts, an automated email will be sent to each user providing the user name (to access the application), a temporary password (to access the application) and temporary PIN (used in lieu of a signature to submit reports). Users may log into the application to update the password and PIN and edit the user profile. In addition to the paper registration form that Certifier and Account Managers must complete, users proposing to be Certifiers and Account Managers must submit a “Trading Partner Agreement.”

There must be one (and only one) Account Manager per MS4 Facility. Account Managers will be able to create accounts for new users and associate and un-associate users with the MS4 Facility they are responsible for. In the event of a change to an Account Manager, the MS4 Facility will need to submit a new paper registration form to DEP so that the new Account Manager can be associated to the MS4 Facility.

Over time new users (without accounts registered by DEP) will desire to use the application. To reduce



the maintenance workload for DEP, it is proposed that Account Managers will be able to create new user accounts and associate those users to the MS4 Facility. When this is done, an automated email will be generated with the user name, password and PIN (as applicable), sent to the new user. If the new user is a Viewer or Preparer, they may begin using the application immediately. If the new user is a Certifier, the user will be able to view and prepare reports but will not be able to submit reports until DEP 1) receives the Trading Partner Agreement and 2) indicates (in the application) that the Trading Partner Agreement was received.

New Account Managers may only be created by DEP through the submission of a registration form and Trading Partner Agreement.

**NOTE** – It is possible that a “joint permit” was issued to a group of MS4s. In other words, a permit can be issued to multiple co-permittees. The application will need to consider co-permittees in establishing user roles.

### Users

Once an account is created for a user, the user may edit his or her profile. The profile will consist of name, employer, employer address, phone number, email address, user name, and the answers to at least three “challenge questions.” (For those who are able to submit reports, at least one challenge question must be presented to the user along with the request for a PIN before submission can be completed). Users may also un-associate themselves from an MS4 Facility, but only Account Managers may associate the user to an MS4 Facility.

The application should include a function that allows users to re-generate or remember the users’ passwords and PINs.

### Administration

Select Penn State and DEP staff should be given administrative security roles; this role should provide for the following functionality:

- Upload batches of data in spreadsheet format from eFACTS to refresh the database (e.g., where new MS4 facilities are created in eFACTS).
- Manually update Facility details.
- Create reports (queries) to extract data.
- Create new accounts and manage all security roles and user associations with MS4 Facilities.
- Update text associated with form questions and other labels.

### Form Changes

The types of questions asked and data required for the application may change over time. Preferably, the design of the application and supporting database would be done in a way that could reduce the amount of time and effort needed to make changes.

### Save Functionality

Allow users to save progress at any time. If possible, prevent two users for the same Facility from accessing an open report at any time. Also, if possible, auto-save the report every 15 minutes. When a user clicks the Save button, logs out and then logs back in, show the status of the report as “Pending,” and if possible take the user directly to the applicable screen where the last save was completed. Alternatively, after the report is accessed show the status of each section of the report and allow the user to select the screen to access.

### Compatibility

The application should be capable of running on all major internet browsers (i.e., latest versions of Internet Explorer, FireFox, Google Chrome, etc.).

### Main Screen

Following log-in, the user should be able to select which MS4 Facility they wish to view, prepare or submit a report for (if there are multiple facilities associated to the user). This step is not necessary if the user is associated to only one MS4 Facility.

The report(s) that are available to the user will then be displayed via a link. Header information including the name of the Client(s) (permittee), Facility, Permit No., Due Date of the Report, Reporting Period, Municipality, County, Effective Date and Expiration Date of the permit, and Permit Renewal Application Due Date (if applicable) should be displayed as read only.

**NOTE** – If a Facility has not submitted a previously due report, do not allow access to a new report that may have been generated.

**NOTE** – Co-permittees are not stored in eFACTS. In eFACTS there is only one client associated with each permit, and one facility associated with each permit. DEP will supply all client names associated with the same Facility and Permit, but certain information such as Municipality and County will be based off the information stored in eFACTS.

### General Information Screen

On this and all subsequent screens, include the same Header information as on the Main Screen. On the General Information Screen display the following pre-populated fields, which may be updated by users:

- Facility Mailing Address (street address and city, state and zip);
- MS4 Point of Contact for Permittee;
- Title, Phone No. and Email for the MS4 Point of Contact.

Updating this information is not required. If the user edits this information, an email should be generated to select DEP staff with the changes so that this information can be updated in eFACTS. The updates made by users to this information will be displayed when the next report is generated.

### Periodic Report Screens

Follow DEP's template ([3800-FM-BPNPSM0491](#)) for the questions and fields needed for the application. The following provides a list of screens that are anticipated as well as required fields and other validation.

#### ***Water Quality Information Screen***

Required fields:

- Are there any discharges to waters within the Chesapeake Bay Watershed? Options are Yes and No. (Note – in the future, this could be automated, but it would require eFACTS subfacility information).
- Identify all surface waters that receive stormwater discharges from storm sewers within the MS4 urbanized area and provide the requested information. At least one entry is required. (In the future this could be automated but would require subfacility information).
  - Receiving Water Name – allow manual entry.
  - Chapter 93 Classification – drop-down menu with options of WWF, WWF-MF, CWF, CWF-MF, TSF, HQ-CWF, HQ-WWF and EV.
  - Impaired? Yes or No options.

- Cause(s) – drop-down menu with options of Cause Unknown, Pesticides, Priority Organics, Non-priority Organics, PCBs, Chlordane, Metals, Mercury, Other Inorganics (Sulfates, etc.), Nutrients, Water/Flow Variability, pH, Siltation, Organic Enrichment/Low D.O., DO/BOD, TDS, Thermal Modifications, Other Habitat Alterations, Pathogens, Suspended Solids, Excessive Algal Growth, Turbidity, Osmotic Pressure and Other.
- TMDL? Yes or No options. Do not allow “Yes” unless “Impaired?” is also “Yes”.
- WLA? Yes or No options. Do not allow “Yes” unless “Impaired?” and “TMDL?” is also “Yes”.

### **General MCM Information Screen**

The following field is required:

- Have you completed all MCM activities required by the permit for this reporting period? Yes and No options.

Pre-populate the contact name and phone number for each MCM with the contact name and phone number for the Facility, and allow the user to edit. (This information is not stored in eFACTS to this level of detail, so there is no need to notify DEP when users update this information).

### **MCM #1 Screen(s)**

Provide a field to allow permittees to upload a copy of the PEOP (BMP #1), target audience lists (BMP #2), and stormwater educational materials (BMP #3).

For BMP #1, Questions 3 through 6 are required.

For BMP #2, Question 3 is required.

For BMP #3, Questions 3, 4, 6 and 7 are required.

For BMP #4, the single question is required.

### **MCM #2 Screen(s)**

Provide a field to allow permittees to upload a copy of the PIPP (BMP #1).

For BMP #1, Questions 3 and 4 are required.

For BMP #2, Question 1 is required. If the answer to Question 1 is “Yes”, require Questions 2 and 3.

For BMP #3, allow user to select the date(s) of public meeting(s) by a calendar. Allow as many dates as necessary. If date(s) are not populated in Question 1, do not allow the user to save entries in Questions 2 and 3. Questions 4 and 5 are required.

### **MCM #3 Screen(s)**

Provide a field to allow permittees to upload a copy of the IDD&E program (BMP #1), maps (BMPs #2 and #3), IDD&E sample results and location (BMP #4), and stormwater ordinance (BMP #5).

For BMP #1, Question 3 is required.

For BMP #2, Questions 1, 3, 4 and 5 are required.

For BMP #3, Questions 1 and 5 are required. Question 2 is required if the answer to Question 1 is “Yes”. Question 4 is required if the permittee is not “new”.

For BMP #4, if the permittee is a new permittee, Question 1 is required. For renewal permittees, Question 2 is required. For all permittees, Questions 3 and 6 are required. If the answer to Question 4 is "Yes" then Question 5 is required.

For BMP #5, Questions 1 and 4 are required. Question 3 is required for renewal permittees.

For BMP #6, Questions 1, 2 and 3 are required.

#### ***MCM #4 Screen(s)***

The question, "Are you relying on PA's statewide program for stormwater associated with construction activities to satisfy this MCM?" is required. If "Yes" is selected, skip to MCM #5 Screen(s). If "No" is selected, continue.

Provide fields to allow the upload of a written stormwater associated with construction activities program (BMP #1) and a stormwater associated with construction activities ordinance (BMP #2).

For BMP #1, Question 2 is required for renewal permittees and Question 3 is required for all permittees.

For BMP #2, Question 2 is required for renewal permittees.

For BMP #3, Questions 1 and 2 are required.

For BMP #4, the single question is required.

#### ***MCM #5 Screen(s)***

The question, "Are you relying on PA's statewide program for MCM #5 BMPs #1 - #3?" is required. If "Yes" is selected, skip to MCM #5 BMP #4. If "No" is selected, continue.

Provide fields to allow the upload of a written post-construction management plan (BMP #1), documentation of inspections of PCSM BMPs (BMP #3), ordinances to address post-construction stormwater runoff (BMP #4) and written inspection program (BMP #6).

For BMP #1, Question 2 is required for renewal permittees. Question 3 is required for all permittees.

For BMP #2, Questions 1, 2 and 3 are required.

For BMP #4, Questions 1 and 3 are required. Question 2 is required for renewal permittees.

For BMP #6, Question 2 is required for renewal permittees, and Questions 3 through 8 are required for all permittees.

#### ***MCM #6 Screen(s)***

Provide fields to allow for the upload of a written O&M program (BMP #2) and training program (BMP #3).

For BMP #1, Questions 1 through 4 are required.

For BMP #2, Question 2 is required for renewal permittees. Question 3 is required for all permittees.

For BMP #3, Question 2 is required for renewal permittees. Questions 3 and 4 are required for all permittees.

#### ***Best Management Practices Screen(s)***

The first question is required for all permittees.

Under the headings “MS4 TMDL Plan” and “Chesapeake Bay Pollutant Reduction Plan”, the first question is required for all permittees. If “Yes” is selected for either, the question concerning the status of the plans must be answered.

If the permittee indicates that either the TMDL Plan or CBPRP is approved, the two questions following the introductory questions are required.

### ***BMP Inventory Screen***

Allow users to select a box to indicate that there were no new structural BMPs or ongoing non-structural BMPs implemented in the urbanized area during the reporting period. If this is selected, users can skip the BMP Inventory Screen.

If not skipped the following fields would be available:

- BMP Name/Description (Required) – provide a drop-down list with the following Bay-approved BMPs: Bioretention/raingardens, Bioswale, Capture and Reuse, Dry Detention Ponds and Hydrodynamic Structures, Dry Extended Detention Ponds, Impervious Urban Surface Reduction, Permeable Pavement w/ Sand, Permeable Pavement w/o Sand, Regenerative Stormwater Conveyance, Street Sweeping, Urban Filtering Practices, Urban Forest Buffers, Urban Growth Reduction, Urban Infiltration Practices w/ Sand, Urban Infiltration Practices w/o Sand, Urban Nutrient Management, Urban Stream Restoration, Urban Tree Planting, Vegetated Open Channels, Vegetated Roof, Wet Ponds and Wetlands, and Other. (If Other is selected require a further description).
- Drainage Area – manual entry, in square feet.
- Latitude and Longitude (Required Only for Structural BMPs, i.e., not street sweeping) – if possible open a geospatial application that will allow users to select the location corresponding to the center of the project area. Populate the coordinates in the BMP Inventory Screen once selected.
- Receiving Waters (Required) – manual entry (in the future this could be automated using the NHD layer).
- Date Installed or Implemented (Required) – provide a calendar to select a date of completion.
- NPDES Permit? (Required) – an indicator column for whether or not the work was completed under an NPDES permit for stormwater associated with construction activities.

Provide an indicator column and require the user to select, for each BMP, whether it is a structural or non-structural BMP.

In addition to the fields above, require the user for each BMP to specify the name of the owner of the BMP.

### ***Other Required Report Elements Screen***

The 3 questions in this section of the report are required.

#### Review and Revise Past Submissions

Users must be able to review past reports submitted through the application, including any attachments to the reports, and choose to revise a previously submitted report. The information that has changed as a result of the revision should be stored separately in the database for future querying. If a report has been revised, both the original and revised versions of the report should be available through the application.

#### Attachments

Allow file types of PDF, JPG, JPEG, DOC, DOCX, XLS and XLSX. Allow administrators to add other file types that the application will accept. Establish a maximum attachment file size of 10 MB, but allow administrators to modify this limit.

#### Automated Emails

Automated emails will be generated under the following conditions:

- New user account creation with user name, temporary password and temporary PIN – sent to user only.
- New Facility association to an existing user – sent to user and Account Manager.
- Reminder of report due, 90 days prior to the due date – sent to all users associated with a Facility.
- Reminder of report overdue – recurring, every 30 days until the report is submitted – sent to all users associated with a Facility with a copy to specific DEP staff.
- Verification of receipt – immediately following submission to inform users and specific DEP staff that DEP has received the report (in the database). A PDF version of the annual report will be attached to this email. This process will also run when there is a revision to a report.

#### Data Required to Launch Application

DEP will supply the following data to Penn State in support of the launch of the application:

- MS4 Facility ID and Name;
- Client ID and Name;
- Facility Mailing Address, Municipality and County
- Facility Latitude and Longitude
- New Permittee or Renewal Permittee
- Permit Authorization ID No. and Permit No.
- Permit Issuance, Effective and Expiration Dates and Renewal Application Due Date
- Report Due Dates and Reporting Periods

#### Future Enhancements

The initial phase of this development work will focus on the components described above. In the future consideration will be given to the following:

- Automatically producing a checklist for the benefit of DEP report reviewers to determine strengths and weaknesses of the report.
- Providing the capability for the electronic processing of payments. In the future it is envisioned that a fee will be required with the submission of MS4 Annual Reports. The application should allow for the acceptance of credit card and ACH transfers in the future.

#### eReporting Rule Requirements

EPA's eReporting Rule would require states to populate its ICIS-NPDES database with the following additional data elements:

MS4 Reliance on Other Government Entities  
Unique Number for Each Municipality Covered Under MS4 Permit  
Listing of MS4 Permit Components  
Identified Measurable Goal for Each MS4 Permit Component  
Status and Assessment of Implementing MS4 Components in Permit  
Number of Notice of Violations

Number of Administrative Fines  
Number of Stop Work Orders  
Number of Civil Penalties  
Number of Criminal Actions  
Number of Administrative Orders

At this time there is uncertainty on what all of these data elements represent; however, the periodic report template may need to be updated to capture these elements.

In addition, efforts should be made to adhere to the Cross-Media Electronic Reporting Rule (CROMERR) published by EPA.

#### Data Integration

The eReporting Rule would require that ICIS be populated with, at a minimum, the data elements listed above (other elements such as permit number, report start, end and due dates will be necessary). To prevent DEP from needing to manually enter data into ICIS, collected data will need to be transferred to ICIS through the CDX node using schema provided by EPA.

#### Hosting

For planning purposes, it is assumed that the application will be hosted on Penn State servers.

#### Alias

An alias that is easily remembered should be used for the application (e.g., [www.ms4reporting.com](http://www.ms4reporting.com)).